

Independent Review of the Coalpac Environmental Assessment

Institute for Sustainable Futures

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22 JUNE 2012

PREPARED FOR:

Total Environment Centre

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ABOUT THE AUTHORS

The Institute for Sustainable Futures (ISF) was established by the University of Technology, Sydney in 1996 to work with industry, government and the community to develop sustainable futures through research and consultancy. Our mission is to create change toward sustainable futures that protect and enhance the environment, human well-being and social equity. We seek to adopt an inter-disciplinary approach to our work and engage our partner organisations in a collaborative process that emphasises strategic decision-making.

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CITATION

Please cite this report as:

Lederwasch A & Mukheibir P, 2012 Independent Review of the Coalpac Environmental Assessment, [report prepared for the Total Environment Centre], Institute for Sustainable Futures, UTS, Sydney, Australia.

EXECUTIVE SUMMARY

The Total Environment Centre (TEC) commissioned the Institute for Sustainable Futures (ISF) to undertake an independent review of the Coalpac Environmental Assessment (CEA) for the Coalpac Consolidation Project (CCP). This report provides the findings of that review.

The conclusions of the review were that significant issues are evident with the Coalpac Environmental Assessment. Key issues relate to:

- The application of triple bottom line and ecological sustainable development principles;
- The rationale for the consolidation project;
- The setting of physical boundaries for the assessment of the benefits and cost, specifically the accounting for GHG emissions over the full life-cycle of the coal mine;
- The setting of time frames for the assessment of the benefits and costs, especially those that have the potential to be cumulative; and
- The valuation of environmental and social costs in the economic assessment.

The application of triple bottom line and ecological sustainable development principles

The CEA does not use TBL as a method of assessing the Project's impact but it does make reference to ESD principles and makes claims that the Project is consistent with ESD principles. However, as is demonstrated throughout the report, the CEA treats the social, ecological and economic domains of ESD as items that can be traded off amongst each other to achieve a balance. It is stated in the CEA that the Economic and Social benefits outweigh the Social and Environmental costs (Bailey 2012, p XXIV). The arguments used to establish 'Project need' are heavily weighted on economic factors. The assessment is based on the economic benefits, and very little is based on social and environmental considerations. Rather than pursuing the development of all three domains of ESD, the CEA explains the economic development outcomes the Project would deliver and details the efforts that will be made to avoid and reduce the negative ecological and social impact of the Project.

ESD is "not a factor to be balanced against other considerations; ESD is the balance between development and environmental imperatives" (Bates, 2002). Properly applied, ESD recognises that ecological integrity and environmental sustainability are fundamental to social and economic wellbeing, particularly when considering the needs of both present and future generations (NCC et al., 2012). It is therefore imperative that all decisions made under the planning system are underpinned by a genuine application of the concept and principles of ESD.

The ultimate role of ESD is to ensure that the needs of future generations are able to be met. The Project poses significant threats to energy security by way of prolonging the use of a depleting, increasingly expensive, and unsustainable energy source, and by delaying a transition to clean energy future for Australia.



The rationale for the consolidation project

The CEA's main point for justifying the project is that coal will be needed internationally and locally to provide "low cost, good quality, thermal coal for electricity" to meet "the inevitable increase in demand for electricity" (pp 261, Bailey 2012). In fact the total National Energy Market demand has been trending downwards since its peak in 2008, and specifically in NSW where it declined by 1.9 TWh (2.4%) from 2008 - 2011 (Nunn and Jander, 2012). It has been suggested that this decline is due to the penetration of PV systems and solar water heaters, which have displaced around 1 TWh per year over this period in NSW (ibid). In addition, the Australian Federal Government's "Clean Energy Plan is expected to cut pollution by a minimum of 5% below 2000 levels by 2020 and 80% by 2050, through a proposed transition to renewable and clean energy, energy efficiency and improved demand management (Commonwealth, 2012). This is likely to further decrease the demand for coal in future.

While alternative and more expensive coal sources for MPPS were considered for the purpose of establishing 'Project need', alternative sources of renewable energy for NSW were not. No assessment has been made of when renewable energy is likely to become economically competitive, and thereby justifying, or not, further coal expansion to meet the need till then.

The setting of physical boundaries for the assessment of the benefits and cost, specifically the accounting for GHG emissions over the full life-cycle of the coal mine

The boundaries for assessment are not consistently applied. The benefits and costs are inconsistently accounted for in the CEA across differing spatial and time scales, as well as being selective when comparing the Project with the no scenario or the current operations.

As an example, the CEA includes benefits flowing from the coal generated energy from MPPS, in the form of electricity being generated for consumption in NSW, but does not take responsibility for associated costs of MPPS, most importantly the associated GHG's. If Coalpac wish to keep an arm's length from costs associated with MPPS it is only fair that it does so with MPPS 'benefits' as well, including the 'indirect jobs' that it values in its net benefit calculations. There is no information on what the 'indirect jobs' are. If Coalpac wishes to include benefits associated with electricity production it must account for GHG associated with MPPS – this would significantly change the net benefit claim (see Section 5.1). The calculation of the cumulative effect of the GHG emissions should be the same for both the National and Global impact assessment. Section 4 provides an overview of several other inconsistencies in the drawing of spatial and physical boundaries.

The setting of time frames for the assessment of the benefits and costs, especially those that have the potential to be cumulative

The time frames for measuring short, medium and long-term benefits need to be identified and used consistently. The Economic Assessment states that the Project would provide "ongoing stimulus to the Lithgow and Bathurst economies", but fails to provide detail on what is meant by "on-going". In contrast, the CEA acknowledges that the coal mining industry cannot provide a sustained stream of jobs and income to Lithgow, the region and NSW, i.e., no long-term or ongoing benefits.

An inconsistency in the application of the timeframe for impacts is apparent in the failure to consider the cumulative effect of the GHG emissions, only the impact of GHG emissions for the period of the mine have been valued i.e. 21 years.



The valuation of environmental and social costs in the economic assessment

As acknowledged in the Economic Assessment, costing environmental impacts is complex, “employment benefits and environmental and social costs are non-market values that can potentially be estimated using non-market valuation methods”. As required by the D-G a “**detailed assessment** of the costs and benefits of the Project as a whole, and whether it would result in a net benefit for NSW” is needed. However, a comprehensive assessment of costs and benefits is not made in the CEA, many costs are not valued, and the environmental and social impacts that are valued are significantly underestimated. The Assessment lacks foresight, does not demonstrate an appreciation or fulfillment of the purpose of ESD and lacks robust and transparent costing methodologies. These are identified below and detailed in section 6.

- Agricultural land use cost;
- Valuing dust and noise impacts;
- Opportunity costs of clearing public forest;
- Opportunity cost of no mine scenario; and
- Unclear boundaries for valuation.

Particularly significant concerns include that the risks around irreversibility of damage to biodiversity values have not been ‘internalized’ into the economic assessment of the project. That is, the significant risk that the Offset Strategy will not be effective in supporting the biodiversity values that the Project will adversely impact on has not been incorporated into the environmental ‘costs’ of the Project. And that agricultural land has been valued at \$1.4 M. This value clearly ignores the future land use potential, the opportunity cost of not being able to use it in the future – a critical issue in Australia today and will only grow in significance as agricultural land decreases and demand for food increases. This is a significant long-term impact of the project. Noting that agriculture is a sustainable industry and an essential industry in a world where food security is becoming an increasingly significant issue.



ABBREVIATIONS

| | |
|----------|--|
| BOMP | Biodiversity Offset Management Plan |
| CCP | Coalpac Consolidation Project |
| CEA | Coalpac Environmental Assessment |
| D-G | Director General |
| DoPI | Department of Planning and Infrastructure (NSW) |
| EARs | (Director-General's) Environmental Assessment Requirements |
| EIS | Environment Impact Assessment |
| EPBC Act | Environment Protection and Biodiversity Conservation Act |
| ERA | Environmental Risk Assessment |
| ESD | Ecologically Sustainable Development |
| GHG | Greenhouse gas |
| GOS2 | Garden of Stone Stage 2 Proposal |
| GWh | GigaWatt hours |
| ISF | Institute for Sustainable Futures (University of Technology, Sydney) |
| MPPS | Mnt Piper Power Station |
| MW | MegaWatts |
| NGER Act | National GHG Emissions Reduction Act |
| NSW | New South Wales |
| OEH | Office of the Environment and Heritage NSW |
| TBL | Triple Bottom Line |
| TEC | Total Environmental Centre |
| UK | United Kingdom |



CONTENTS

| | |
|---|-----------|
| EXECUTIVE SUMMARY | i |
| ABBREVIATIONS | iv |
| 1 Introduction | 7 |
| 1.1 Background | 7 |
| 1.2 Scope of the Review | 9 |
| 2 Principles for Environmental Assessments | 10 |
| 3 Rationale for the Project | 13 |
| 4 Benefits and costs: region, state and global | 15 |
| 4.1 Spatial scales | 15 |
| 4.2 Time scales | 17 |
| 4.3 Comparison scenarios | 17 |
| 5 Impacts due to the Project | 19 |
| 5.1 Consideration of the Greenhouse gas emissions | 19 |
| 5.2 Biodiversity & clearing of public forest | 22 |
| 5.3 Health and safety | 26 |
| 6 Calculations & valuations | 27 |
| 7 REFERENCES | 29 |



1 Introduction

The Total Environment Centre (TEC) commissioned the Institute for Sustainable Futures (ISF) to undertake an independent review of the Coalpac Environmental Assessment (CEA) for the Coalpac Consolidation Project (CCP). This report provides the findings of that review.

1.1 BACKGROUND

Coalpac is an Australian owned coal mining company which owns the Cullen Valley and Invincible Colliery near Cullen Bullen, 25 km northwest of Lithgow in New South Wales (see figure 1). Each mine operates as an individual entity with separate planning approvals under the Environmental Planning and Assessment Act 1979. The CEA report states that the two existing mines, Cullen Valley and Invincible Colliery, will no longer be viable after 2012 when the “approved and accessible resources are extracted in 2012” (pg 264 of Hansen Bailey, 2011). Coalpac have therefore sought Project Approval under Part 3A of the Act to consolidate the operations and management of the two mines under a single, contemporary planning approval, to allow coal mining operations to continue for a further period of 21 years. They have therefore commissioned the preparation of an Environmental Assessment in accordance with the Act.

The result of this consolidation will be the expansion of the open cut and high wall mining and clearing of 995 ha of vegetation to yield 83 million tonnes of coal i.e. up to 3.5 million tonnes of product coal per year for international and local use. In addition, 640 000 tons of sand will also be mined. To achieve this, improved road and rail infrastructure will be constructed to relieve the impact on community roads (Bailey, 2012).

The Director General of the Department of Planning and Infrastructure (DoPI) set specific requirements for the assessment of the proposed consolidation project (DoPI, 2010), which amongst others required the CEA to include a risk assessment of the potential environmental impacts of the project, identifying the key issues for further assessment, including any cumulative impacts. In addition, supplementary requirements under the Environment Protection and Biodiversity Conservation Act and Regulations relating to the impact on critically listed endangered ecological community have been set (DoPI, 2011a).

As stated in Appendix T of the CEA (Gillespie Economics, 2011), the main decision criterion for assessing the economic desirability of this project to society is its net benefit to Australia, i.e. the sum of the discounted benefits to society, less the sum of the discounted costs. Using a simple framework, the CEA concludes that the benefits to Australia of mining coal at this site, i.e. the net production and employment benefits, outweigh the economic costs to society of the negative social and environmental impacts.

Further the CEA states that “it is reasonable to conclude that the Project is consistent with the objectives of the Environmental Planning and Assessment Act 1979 and the principles of Ecological Sustainable Development” (Bailey, 2012). As such, the CEA suggests that “the consenting authority approve the Project”.





Figure 1: Regional locality (Bailey, 2012)



1.2 SCOPE OF THE REVIEW

The Institute for Sustainable Futures was tasked to review the Coalpac Environmental Assessment (Bailey, 2012) for its adherence to Triple Bottom Line principles. TBL has been suggested by the NSW Coal and Gas Strategy Scoping Paper (DoPI, 2011b), for proposals where mining may have the potential to adversely affect other high value existing land uses.

The scope of the review relates specifically to:

- Benefits to Lithgow region, NSW and globally
- Greenhouse gas emissions
- Biodiversity & clearing of public forest
- External costs and benefits
- Health impacts
- Social value of employment
- Transparency of calculations

2 Principles for Environmental Assessments

In 2011, the NSW Government issued a Coal and Gas Strategy Scoping Paper (for which the public consultation was due for completion in May 2012), which suggests that “*triple bottom line* (TBL), cost benefits analysis” be carried out where mining may have the potential to adversely affect other high value existing land uses (DoPI, 2011b). However, no details are provided in the Scoping Paper to decide conflicts between competing land uses (Holding Redlich Lawyers, 2011).

TBL is a concept that has become a framework for organisations to report, assess and improve their performance in relation to sustainability, and takes into account three criteria: economic, environmental and social (Potts, 2004). It also enables decision-makers to quantify trade-offs between different facets of sustainability by expressing benefits or costs as units per dollar earned (Lenzen et al., 2006). While TBL has become an accounting and reporting tool to measure corporate responsibility, it was initially intended as a way of thinking to ensure that all aspects of sustainability were considered when assessing the performance of a business (Vanclay, 2004).

The economic performance of a business is the easiest of the three criteria to assess and measure accurately, taking into account the inflow and outflow of resources from the business. The economic criteria can then be used to determine how much an organisation generates in monetary value. Environmental performance is concerned with a business' or activities' total impact on the natural environment and considers more than just obvious environmental issues (like pollution). It should also consider the total lifecycle impact of their products and services (such as waste, GHG emissions, contamination, impacts on biodiversity etc). The social impact of an organisation or activity is somewhat more difficult to define and measure. In general the impact on the employees and community should be considered to ensure that people are not being exploited or endangered by the operation of the business (DTI, 2012).

The TBL is a phrase that gives the illusion that a workable compromise is always possible between the three competing interests, namely the environment, society and the economy. However, as Fraser (2005) argues, TBL is effectively being used to allow the economy to control the environment. TBL is an artificial construct that does not relate to the actual world that we live within, since both the economy and society are social constructs and can be asked to compromise if necessary, whereas the environment is a finite entity that can exist apart from us and when subject to compromise, a part of it is lost.

A more realistic model of the relationship between the environment, society and the economy (than the conventional triple bottom line), according to Fraser (2005), is to say that the economy is a subset of the society that we live within, which is a subset of the environment and that the environment is bound by physical limits (as shown in Figure 2). Such a model would envisage the economy as a reflection of the constraint imposed on our activity by the environment and the social aspirations we have, rather than accepting a society and environment that is the result of the economy we strive for (Fraser, 2005). Following this approach, the UK government has viewed the goals of sustainability to be essentially twofold: environmental and social. Efforts to achieve a sustainable economy is not so much a goal in and of itself, but should rather be seen as a means to an end, i.e. one that enables society to live within its environmental limits and to build a strong, healthy and just society (DEFRA, 2005).



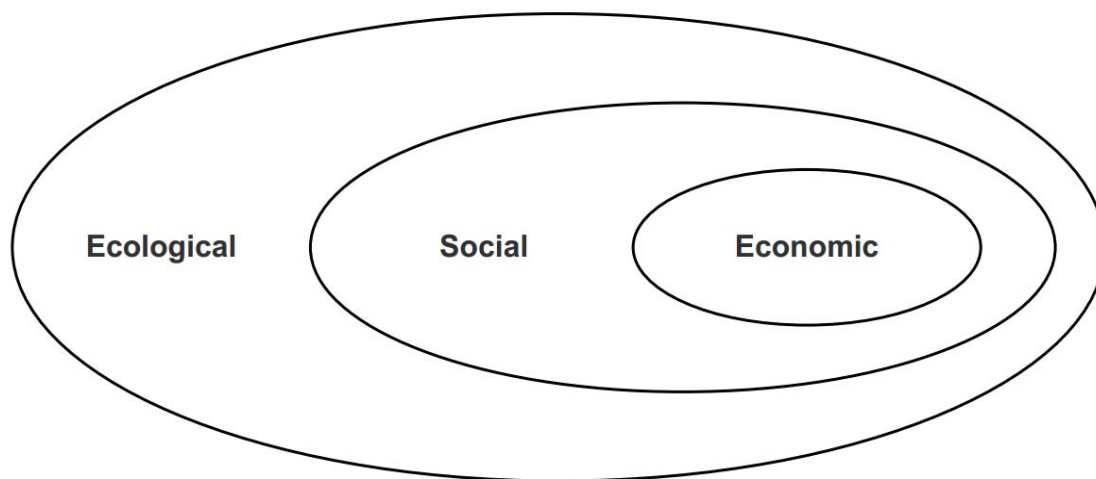


Figure 2: Depiction of Triple Bottom Line (Mitchell et al., 2007)

Care is needed in the language surrounding TBL assessment methodologies so that stakeholders do not get the impression that such assessment methods are a recipe for sustainable outcomes. TBL is useful for the comparison between options, not as an assessment tool, since the “bottom lines” have not been set for environmental or social impacts. That is, the extent to which an activity can adversely affect the social and environmental states has not been measured against a benchmark. In most cases economic viability is used as the “bottom line”, where mitigation costs are offset against economic gains, as has been done in this CEA, to the extent that the Project remains financially viable.

TBL assessment methodologies are best used to determine which option, from a set of options, best meets a project’s objectives; where these objectives incorporate financial, ecological and social elements. In some cases, these objectives should be clearly aligned with widely accepted objectives and principles for sustainable development. The challenge in developing a TBL report is therefore in choosing a set of indicators that, when put together, provides an adequate picture of the whole. This is so that the TBL assessment system can be used as a broad indicator of the options’ relative progress towards the goal of sustainable development (Taylor and Fletcher, 2006).

It is incorrect to assume that a well designed TBL assessment process will always identify a good option, since TBL is ideally used for comparative analysis between various company annual reports, or proposed initiatives. For example, a TBL assessment process may highlight one option as being the best of several very bad alternatives (Taylor and Fletcher, 2006). This is the case with the Consolidation Project where the comparison of costs and benefits have been limited to the alternative ways of operating the proposed mine, whilst non-coal sources of energy have not been considered or compared to mining coal at this site.

The CEA states that a range of mining options “were assessed in consideration of the principles of Ecologically Sustainable Development” (ESD) (pp 34 Bailey, 2012). These principles include, for example¹:

- the precautionary principle;
- inter-generational equity;

¹ *Protection of the Environment Administration Act 1991* (NSW), s 6.



- conservation of biological diversity and ecological integrity; and
- improved environmental valuation, pricing and incentive mechanisms.

However, as discussed above, a situation where TBL is used to trade off pros and cons is not consistent with ESD principles. ESD is “not a factor to be balanced against other considerations; ESD is the balance between development and environmental imperatives” (Bates, 2002). Properly applied, ESD recognises that ecological integrity and environmental sustainability are fundamental to social and economic wellbeing, particularly when considering the needs of both present and future generations (NCC et al., 2012). It is therefore imperative that all decisions made under the planning system are underpinned by the concept and principles of ESD.

The notion of inter-generational equity has not been adequately addressed in the CEA, since the issue of GHG emissions has not been assessed for the full life cycle of the coal or the compound effect in contributing to global warming. Contributing to global warming does not meet the principles of ESD and will be an issue for future generations to contend with.

It is stated that the objective of the Consolidation Project is to “meet the legal, social, political and environmental expectations of the community and achieve a “social licence to mine”, which the CEA claims has been achieved (pp 265 Bailey, 2012). It is stated that the Economic and Social benefits outweigh the Social and Environmental costs (Bailey 2012, p XXIV). It is not clear from the report as to how this “social license” was obtained. All the arguments for the mine are based on economic factors. The assessment is based on the economic benefits, and very little is based on the social and environmental considerations, which cannot be monetized. Whilst employment figures have been cited, attention should be drawn to potential double counting: employment cannot be counted as an economic benefit as well as a social benefit. Employment and knock-on spending are economic considerations. Whilst these considerations do contribute to social wellbeing, factors contributing to social wellbeing extend far beyond economic considerations, e.g. safety, avoiding personal impacts such as noise and dust, enhancement of the social fabric through minimising transit labour, creating public spaces for social gatherings, etc.

Using the TBL approach as a ‘thinking tool’, the Environmental Assessment of the Coalpac Consolidation Project has been reviewed against its assessment of primarily environmental and social considerations, and secondly the economic costs and benefits.



3 Rationale for the Project

According to the Environmental Assessment, there is a sense of urgency because the two existing mines, Cullen Valley and Invincible Colliery, will no longer be viable after 2012 when the “approved and accessible resources are extracted in 2012” (pp 264, Bailey, 2012). However, no details as to why there is a loss viability and operations will cease is provided in the CEA. Further, it states on pages 25 and 27 of the CEA, that Development Consent for Cullen Valley and Project Approval for Invincible Colliery have been granted until 2015 and 2016 respectively (Bailey, 2012). This creates confusion as to why the mines need to be consolidated at this stage and creates the suspicion that it is somewhat confected.

The CEA further justifies the project by stating that coal will be needed internationally and locally to provide “low cost, good quality, thermal coal for electricity” to meet “the inevitable increase in demand for electricity” (pp 261, Bailey 2012). As to the national context, in 2007 the NSW Government established an Inquiry into Electricity Supply, chaired by Professor Anthony Owen (the “Owen Inquiry”). This Inquiry was asked in particular to review the need and timing for increased baseload supply. The Inquiry concluded that there was a potential shortfall in baseload supply from 2013/14 (Owen, 2007). Since the Inquiry, the projections for both electricity consumption and electricity generation have been modified significantly (Transgrid, 2008), such that the findings of the Inquiry warrant substantial reconsideration. The projected shortfall now only appears in 2017, and by 2020 reaches only 3,800 GWh¹. These changes are essentially because additional renewable generation has been included in the official projection to take account of the new national Renewable Energy Target (RET) for 20% renewable electricity by 2020, and because the projection for energy consumption is lower due to lower projected economic growth. However, even the revised energy shortfall disappears if moderate energy efficiency measures are put in place. Rather than an energy shortfall, there is the possibility of a surplus of electricity generation potential of more than 12,000 GWh by 2019/20 (Rutovitz and Dunstan, 2009).

Attention should also be drawn to fact that the total National Energy Market demand has been trending downwards since its peak in 2008, and specifically in NSW where it declined by 1.9 TWh (2.4%) from 2008 - 2011 (Nunn and Jander, 2012). This decline cannot be attributed to changes in the weather, but rather it has been suggested that this decline is due to the penetration of PV systems and solar water heaters, which have displaced around 1 TWh per year over this period in NSW (ibid). In addition, the Australian Federal Government’s “Clean Energy Plan” is expected to cut pollution by a minimum of 5% below 2000 levels by 2020 and 80% by 2050, through a proposed transition to renewable and clean energy, energy efficiency and improved demand management (Commonwealth, 2012). This is likely to further decrease the demand for coal in future. On top of this, the market share of renewable energy is likely to increase over the 21 year life of the Project. This will be the result of a number of factors. Non renewable sources of energy, such as coal and oil, will continue to deplete in quantity and quality and consequently become more difficult to access (as deposits become more spread out and deep over time) and thus more energy intensive and expensive to extract (Mason et al., 2011). The market share of renewable energy will further increase as a result of economies of scale and the increasingly competitive prices of such energy sources (particularly as subsidies to the coal industry are removed or otherwise distributed equally amongst renewable energy sources). The consequence of all these factors is the decreasing demand for non renewable sources of energy over time.



Further, the recent Electricity Statement of Opportunities (AEMO, 2012) states that both annual energy and the forecast for peak demand have decreased since the their August 2011 publication. Annual energy is down 5% (10TWh) from the previous forecast for the five eastern states². The reason for this occurrence in the eastern and south-eastern region is given as the changing economic landscape, a more energy aware public, the impact of rooftop photovoltaic installations and the milder weather. Specifically the decrease of 86 MW in NSW has been attributed to the closure of a potline at the Kurri Kurri Aluminum smelter. In addition, off grid technologies such as small co- and tri-generation systems that reduce demand on the grid may in future grow to represent a significant portion of supply (Nunn and Jander, 2012).

The CEA also states that the provision of cheaper locally produced coal to the Mount Piper Power Station (MPPS)³ will increase from 40% to 70%, and argues that therefore cheaper electricity will be provided to customers (Gillespie Economics, 2011). The CEA does not give an indication of the magnitude of the potential reduction in electricity price from MPPS, that is, the percentage reduction in electricity price to the customer is not provided in the report. It should be noted that generation costs are not the key drivers of electricity price rises; infrastructure upgrades are (Langham et al., 2010; Ison and Rutovitz, 2012). In addition, no evidence was provided in the reports of guarantees in place to avoid the coal from the Project being exported for higher returns or that coal from other sources will not be provided to MPPS instead, thereby negating the provision of 'cheaper' electricity.

While alternative and more expensive coal sources for MPPS were considered for the purpose of establishing 'Project need', alternative sources of renewable energy for NSW were not. No assessment has been made of when renewable energy is likely to become economically competitive, and thereby justifying, or not, further coal expansion to meet the need till then.

The ultimate role of ESD is to ensure that the needs of future generations are able to be met. The Project poses significant threats to both energy security (by way of prolonging the use of a depleting, increasingly unreliable, increasingly expensive, and unsustainable energy source, and delaying a transition to Australia's clean energy future. The CEA acknowledges "there is great uncertainty around both the availability and price of coal from alternative sources for MPPS". While this statement is made to justify the Project (due to the impact on MPPS) it highlights the lack of certainty about its predictions.

² NSW, Queensland, Victoria, Tasmania and South Australia

³ MPPS provides up to 13% of the electricity supply in NSW (Gillespie Economics, 2011)



4 Benefits and costs: region, state and global

It is a requirement of the Director General that the project results in a “net benefit to NSW” (DoPI, 2010). However, the scale of the benefit to NSW is disproportionately lower than the benefits to Coalpac. The Economic Assessment provided in Appendix T (Gillespie Economics, 2011) identifies benefits to NSW through royalties and that these total at least \$144M (present value) over the life of the project. Considering that the Project is estimated to have a total net benefit of \$1,519M (excluding the benefits of employment and the costs of environmental impacts), the benefit to NSW equates to 9%. The Commonwealth stands to gain at \$169M (present value) through taxes, which equates to 11%. This leaves 80% of the total net benefit going to the shareholders of Coalpac (based on net present value).

Further, the benefits and costs are inconsistently accounted for in the CEA across differing spatial and time scales, as well as being selective when comparing the Project with the no scenario or the current operations. The boundaries for assessment are not consistently applied, as discussed below.

4.1 SPATIAL SCALES

The Economic Assessment provided in Appendix T (Gillespie Economics, 2011), suggests that the distribution of economic benefits will be distributed across four spheres. As discussed above, viz:

- Coalpac and its shareholders
- The Lithgow community through the Voluntary Planning Agreement
- NSW Government through royalties, and the NSW community through reduced electricity prices
- The Commonwealth of Australia through taxes

However, the Coalpac Environmental Assessment (CEA) is not consistent with the setting of the physical boundary when undertaking the analysis of the benefits and impacts of the Project. It proposes for example, that the benefits for the Project will be realised at a National level. That is, they have set the project boundary at the Australia wide level, and therefore the project’s economic benefits to be realised at the National level. However, they do not consider the negative impacts, such as GHG emissions within this same boundary (See section 5.1). It is not clear which community has given the “social license to mine”, as is claimed by the CEA (pp 265 Bailey, 2012).

Three of these spheres stand to gain economically, while only one has to deal with the direct impact of the mine, viz. the Lithgow community. The direct negative impacts will be experienced at a local level, for example through noise, dust, and clearing of native vegetation. The cost for attempting to mitigate these will be borne by Coalpac and internalized as capital and operational costs through land acquisitions and offset packages. At a national and global level, GHG emissions will be increased. It is argued that these too will be internalized through the carbon tax, which comes into effect in July 2012 (Gillespie Economics, 2011). The CEA does not take into consideration the total lifecycle impact of their products and services, as suggested in Section 2 of this review, and does not include the GHG emissions of the electricity production. It considers the GHG emissions within the boundary of the mining activities only in the net benefit calculation. This is discussed in Section 5.1.



A cost benefit analysis should be considered at each community level to determine the net impact for society and the environment, consistent with TBL and ESD principles. This is discussed further in the following sections.

Lithgow Region:

For the Lithgow region, the economic benefits of the Project are described in terms of 30 new jobs and indirect economic stimulation, together with the fact that the loss of jobs and local economic stimulus will be delayed by 21 years, when the mine closes. However, these benefits are not sustainable, since mining is not a sustainable activity. The jobs and economic stimulation will not be sustained past the 21 years of operation. The proposed coal mine does not build a local economy that can sustain itself after the mine closure. And arguably would be to its detriment, as a direct impact of the Project would be to remove both existing and potential sustainable future land use opportunities, including agricultural and recreational.

The Project also proposes to contribute to the local region through the “establishment of a Voluntary Planning Agreement in consultation with Lithgow City Council to fund local community projects”. However, the quantum of this proposed contribution is not stated and therefore the benefit to the region through this initiative cannot be assessed.

An ancillary benefit to the local community through the improved mining infrastructure will be reduced impact on the local roads by heavy trucks. However, as is explained in section 5.3 claims around truck movement and associated impacts are based on a comparison to what occurs under existing Coalpac approvals. This comparison is misleading. Truck movement should be compared to a no mine scenario.

The stated environmental benefits in the CEA are limited to the offsets, which can at best be described as maintaining the status quo, however, even that is contested (see Section 5.2). The Cullen Valley mine currently does not have any obligation or plan with regard to rehabilitation after its closure. The Project would ensure that both mines when consolidated were rehabilitated under current legislation (Bailey, 2012 p44).

The disruption to families and the community through the acquisition of affected land due to noise and dust has not been assessed or accounted for in any way in the CEA.

State and Federal:

When describing the benefits for NSW and Australia, these are described in economic terms, or more specifically in raised revenue through royalties and taxes respectively. The direct environmental or social impacts at the local level are not borne by the State or Federal levels. Only the production of GHG is considered, and only for the mining operation and not for the life cycle of the product.

The CEA also includes benefits flowing from the coal generated energy from MPPS, in the form of electricity being generated for consumption in NSW, but does not take responsibility for associated costs of MPPS, most importantly the associated GHG's. If Coalpac wish to keep an arm's length from costs associated with MPPS it is only fair that it does so with MPPS 'benefits' as well, including the 'indirect jobs' that it values in its net benefit calculations. There is no information on what the 'indirect jobs' are. If Coalpac wishes to include benefits associated with electricity production it must account for GHG associated with MPPS – this would significantly change the net benefit claim (see Section 5.1). The calculation of the cumulative effect of the GHG emissions should be the same for both the National and Global impact assessment.



On top of this, is the cumulative impact that mining has on the national economy, which is to drive the value of the Australian dollar up, as international entities buy the dollar for the purpose of buying Australia's minerals. The flow on effect of which is to make it more and more difficult for all other industries, especially manufacturing, in Australia to survive, as it becomes cheaper to import goods than to support local business (Mason et al., 2011; Grudnoff, 2012).

Globally:

At a global level it is difficult to measure the economic benefits, since most the coal will be used locally and Coalpac is Australian owned (although no shareholder details have been provided to substantiate this claim, which is a significant omission considering a very large and significant proportion of the claimed economic benefit could be flowing offshore). However, the cumulative effect of GHG emissions is likely to make the global proposition less attractive – if the full life cycle GHG emissions were accounted for, regardless of where the energy is produced (see Section 5.1).

4.2 TIME SCALES

There is an acknowledgement in the CEA that coal reserves will deplete but this is not taken into account in the 'Economic Assessment'. This acknowledgment is an admission that the coal industry cannot provide a sustained stream of jobs and income to Lithgow, the region and NSW, i.e., no long-term benefit (assuming this is benefit beyond the projects life time). This raises the issue that time frames of measuring short, medium and long-term benefit need to be identified and used consistently.

The economic assessment states that the Project would provide “**ongoing** stimulus to the Lithgow and Bathurst economies” but fails to provide detail on what is meant by “ongoing”. Considering the length of the project and the finite amount of coal in the region this could not extend longer than 21 years. There is no assessment of impact on economic well being of the local and regional community after this short-time frame. Best practice would involve a transition plan that details its commitment to ensuring genuine ongoing benefits and sustainability of the community. Some form of acknowledgement of this is made when stated “it is not possible to foresee the likely circumstances within which cessation of the Project would occur” for example, “the significance of the impacts of the Project cessation would depend on...if cessation of the mine takes place in a declining economy...or in a growing, diverse economy”.

Agricultural land has been valued at \$1.4 M. This value clearly ignores the future land use potential, the opportunity cost of not being able to use it in the future – a critical issue in Australia today and will only grow in significance as agricultural land decreases and demand for food increases. This is a significant long-term impact of the project. Noting that agriculture is a sustainable industry and an essential industry in a world where food security is becoming an increasingly significant issue.

4.3 COMPARISON SCENARIOS

The consolidation project needs to be viewed either as a *new* project, or an *expansion* project. It can't be both for the purposes of the CEA.

The Economic Assessment uses the income earned by the 120 employees to determine the annual economic impact of the Project (Gillespie Economics, 2011 p21). However, jobs are said to increase from 90 to 120 FTEs i.e. 30 additional jobs, which is inconsistent with economic impact calculation. If we are to believe that the coal mine will close at the



end of 2012, then in comparison with the no mine scenario, jobs will indeed be 120 FTE, or if the Project is an expansion of the existing mining operation, then the economic impact should be based on the additional jobs.

Along a similar vein, one of the justifications for the mine is that “the Project would address some issues that have in the past caused concern in the community by substantially removing coal haulage from the road system...thus reducing road use, air quality and noise issues” (Bailey, 2012, pxxi). This methodology is misleading, since the Project should be compared with a no mine scenario, not the current mining operations, which we are told will in any event cease at the end of 2012. For example, the assessment of truck movement and associated impacts should be compared to the no mine scenario and not to what occurs under existing Coalpac approvals.



5 Impacts due to the Project

5.1 CONSIDERATION OF THE GREENHOUSE GAS EMISSIONS

There are two main issues with the assessment of the Project's GHG impact:

1. The air quality impact assessment does not accurately reflect the true adverse impacts of the Project in relation to its GHG emissions.
2. The economic assessment does not identify clear boundaries around the Project for the purposes of identifying the appropriate emissions scopes to include in the assessment.

The DG requirements that relate to these issues include:

- "Qualitative assessment of the potential scope 1, 2 and 3 GHG emissions of the Project"; and
- "Qualitative assessment of the potential impacts of these emissions on the environment".

Both issues are matters of boundaries. The question of where the boundary should be drawn in consideration of the impact of coal mining has both a legal and an ethical dimension. The legal question is directly addressed in a number of recent Australian cases (McGrath, 2008)⁴. An overview of key cases is provided in this section.

In relation to the first issue:

The Air Quality Assessment (PAEHolmes, 2011) fails to provide the level of detail required for the Minister to make an informed decision on the GHG impact of the Project. It contains irrelevant, inconsistent and incorrect information, which has potential to be misleading and does not provide an adequate assessment of cumulative impacts of the Projects GHG's.

Some Scope 1 emissions are included while others are left out, for example emissions from the shipping of product coal are not included. The justification for this omission is unreasonable, "emissions from shipping of product coal are not included due to the difficulties in emission estimates, including uncertainty in export markets and destination of product in the future..." (PAEHolmes, 2011). It also does not include Scope 1 emissions from employee travel.

Further, the air quality impact assessment incorrectly classifies the scope type of the emission sources, for example, emissions from the transport of coal is identified as a Scope 3 emission, when in fact, it is a Scope 1 emission. The correct identification of the scope of this emission source was identified earlier in the GHG assessment, "scope one emissions include...transportation of materials, products..."

The assessment of Scope 3 emissions, in particular from the burning of the coal product, is not comprehensive. It does not include a satisfactory "detailed assessment" of the cumulative impact of the Project's GHG's. Rather it estimates the individual impact of the Project's GHG emissions and calculates this as a percentage of total global GHG

⁴ Australian Conservation Foundation v Minister for Planning (2004) VCAT 2029; Reference number **Error!**
Bookmark not defined.; Friends of the Earth Brisbane v Xstrata Coal Queensland and Department of Environment and Resource Management [2011] Land Court of Queensland.



emissions to argue that “the emissions estimated for this Project will not individually have any significant impact on global warming” (PAEHolmes, 2011, at s12.5). The Court in the case of *Gray* determined that “the fact there are many contributors globally [to climate change] does not mean the contribution from a single large source...should be ignored in the environmental assessment process”⁵. Further, the Court determined that viewing impacts in a piecemeal fashion undermines the planning process (Bach and Brown, 2009).

In relation to the second issue:

Most important is the way in which the GHG impact of the Projects has been accounted for in the economic assessment. The economic assessment factors in a few impacts that the Project would have on GHG concentrations, the effect of which grossly underestimates the adverse impacts of the Project included in the calculations. It includes the direct emissions (Scope 1) in its calculations and identifies these as being emissions from mining operations and transportation of coal and sand, although shipping transportation is not included. The justification for the exclusion of emissions associated with the burning of the product coal is that the Project for which approval is being sought is the mining of coal as opposed to the burning of coal and that the emissions from the burning of coal is not subject to the control or influence of Coalpac. In addition this narrow approach is justified in the Air Quality Impact Assessment on the basis that the NGER Act does not require reporting of Scope 3 emissions and that to include them would lead to double counting. However, the purpose of an CEA is not to create an emissions database and track Australia’s GHG budget. The purpose is to enable an informed evaluation of the impact of the proposed project. It is irrelevant and misleading to discuss the NGER Act requirements and the danger of double counting.

The case *Minister for the Environment and Heritage v Queensland Conservation Council Inc* (2004)⁶ outlined that any EIS and associated planning decision should take into account adverse environmental impacts, including downstream or ‘indirect’ impacts. *Gray v Minister for Planning* [2006]⁷ addresses the relationship between coal mining activities and the combustion of coal. It provides legal precedent for the inclusion of emissions from the combustion and transport of coal. In her ruling Justice Pain cited the need to consider *Ecologically Sustainable Development (ESD)* principles such as intergenerational equity and the precautionary principles when assessing a similar coal mine. Specifically, the precautionary principle required that the mine’s cumulative effects, including downstream emissions, be assessed⁸ and that the potential climate impacts should be assessed despite any scientific uncertainty about their extent⁹. There is thus legal precedent for inclusion of the product impacts as well as the production impacts.

The implication is that both the planning consent authorities and the mine proponents should include the emissions from associated national and international transport in the air quality assessment and include these emissions and the emissions from the combustion of coal in the economic assessment, which determines the net benefit that the Project offers to society by subtracting “any environmental impacts” from the benefits relating to net production and employment. As it stands the economic assessment grossly underestimates the adverse ecological impacts of the Project.

⁵ Anvil Hill Case [2006] NSWLEC 720 at 98

⁶ 139 FCR 24 at [53]-[57] (“Nathan Dam Case”).

⁷ *Gray v The Minister for Planning, Director-General of the Department of Planning and Centennial Hunter Pty Ltd* [2006] NSWLEC 720 (‘Anvil Hill Case’)

⁸ Op cit 7, Id at 122, 131, 126.

⁹ Op cit 7, Id at 131.



From an ethical perspective, consideration of the impact of coal mining in the Consolidation Project in isolation from the direct impact of its product is highly questionable. This argument would have the producer (the proponent) only supplying demand that would otherwise be met by alternative suppliers. Recasting this argument with a number of other products which have damaging consequences in use rather than in their production is illustrative, for example, weapons manufacture or tobacco. Most ethical investment funds are specifically committed to disinvesting from their production, because of the effects of the products (EIRIS, 2008). The potential effects from climate change are certainly as damaging¹⁰. For example the World Health Organisation estimates that already 150,000 deaths are occurring annually due to climate change (WHO, 2011), while Myers (2005) estimates that by 2050 there will be 250 million displaced people due to climate change. Long-term threats are far more damaging, with threats of irreversible ecological damage.

Using a carbon budgeting approach, as advocated by the Australian Government's Climate Commission (2011), indicates that the inclusion of all greenhouse gas emissions from proposed coal mines is also an intergenerational equity issue. If the Earth is to have a chance of staying within 2°C of warming, there is a finite carbon budget over the next forty years. This implies that the total emissions of the proposed Consolidate Project coal mine should be assessed in the light of this budget, and that local emissions cannot be considered in isolation from the end use emissions of the product.

The approach taken in the Economic Assessment (Gillespie Economics, 2011) ignores the significant impact the Project would have on prolonging the use of coal as a major energy source in Australia, and consequently its impact on delaying a transition to a clean energy future. Courts have found that on application of the intergenerational equity principle through the EPBC Act Government's have been found responsible to assess indirect impacts of coal industry expansion on the basis of their significant impact on GHG concentrations and their contribution to climate change (Bach and Brown, 2009).

In *Taralga Landscape Gaurdians Inc v Minister for Planning and RES Southern Cross Pty Ltd*¹¹ Preston J explained that intergeneration equity should be a key consideration of planning decisions, "the principles of sustainable development are central to any decision-making process concerning the development of new energy resources. One of the key principles underlying the notion of sustainable development is the concept of intergenerational equity"¹². GHG emissions from the Project, and their effect on global warming, are such an instance where the intergenerational equity has not been maintained.

Further matters that have not been adequately addressed to enable the Minister to appropriately assess the GHG impacts of the Project include:

- It is not clear why the Australian damage costs (\$0.2Million) are lower than the global damage costs for GHG (\$15 Million) (Gillespie Economics, 2011).
- The Carbon Tax should be an expense that is included in the net positive benefit calculations when determining its economic viability. The economic assessment states that when the Carbon Tax is implemented then global GHG costs would be internalized into Coalpac's operating costs. This is an important piece of information that could be estimated now, particularly as the Carbon price comes

¹⁰ For a detailed discussion of the current and future impacts of climate change on Australia see <http://climatechangeinaustralia.com.au> and the Garnaut Review Chapter 6 - www.garnautreview.org.au/pdf/Garnaut_Chapter6.pdf.

¹¹ [2007] NSWLEC 59

¹² Id at 73



into effect in July this year and its cost is known. This expense is definitely an important factor to be costed to enable an informed decision. There is no reasonable justification not to include it.

- From the Environmental Risk Assessment (Hansen Bailey, 2011) report there is no way to determine whether an energy or GHG estimate has been done for the construction and/or operational phases. With no such measurements, the impact and scale of the hazard, and how to manage it is not possible.

5.2 BIODIVERSITY & CLEARING OF PUBLIC FOREST

The Commonwealth Department of the Environment, Water, Heritage and the Arts determined that the proposed development is a "controlled action" under the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act). The Director-General's supplementary requirements were issued in response to this determination (DoPI, 2011a).

The Director-General's requirements and supplementary requirements identify the key issues to be addressed in the Environment Assessment to enable an appropriate level of assessment of the projects impacts on Biodiversity, in particular on EPBC Act listed critically endangered and threatened species.

The Ecological Impact Assessment (EIA) includes a detailed assessment of many direct and indirect impacts of the project on biodiversity values. However, it appears that some of the Director-General requirements are not sufficiently addressed. These are:

- Detailed description of the projects impact on the breeding cycles of EPBC Act listed species;
- Detailed description of the projects impact on availability or quality of habitat for EPBC Act listed species; and
- Statement of whether relevant impacts are likely to be unknown, unpredictable or irreversible.

Irreversibility impacts

Risks concerning the irreversibility of impacts are identified, "although extensive impacts will occur on a local scale, not all of these are irreversible". However no detail is included on what specific relevant impacts may be irreversible. The ecological impact assessment provides nothing more than general statements as to irreversible impacts, "*if* appropriate effort is put into the subsequent rehabilitation of building and infrastructure areas, it is *likely* to be *possible* to recreate the communities that previously existed in these areas" (Cumberland Ecology, 2012, s4.11). Not only does this demonstrate a lack of necessary detail, as required by the DG but it also highlights that there is a real risk that the damage caused by the Project to the vegetation, habitats and communities they support will be irreversible. Also supporting the case that there are significant risks concerning Coalpac's capacity to recreate the communities that fulfill rehabilitation intentions is the following statement in the EIS, "rehabilitation and regeneration of forest and woodland is *possible* on degraded areas and has *potential* to reduce the impacts of habitat removal on threatened species" (Cumberland Ecology, 2012). 'Possible' and 'potential' are words that encompass a significant level of risk and communicate that the Offset Strategy may not effectively "counterbalance", as it is put in the economic assessment, the significant known and likely damage that the Project would cause to biodiversity values including the removal of significant areas of habitat of EPBC Act listed endangered and threatened species.



The CEA also states that the impacts will dissipate when mining stops. This is both incorrect and misleading. There is significant risk that impacts on biodiversity will be irreversible. Impacts on soil conditions are likely to be irreversible, affecting both flora and fauna that rely on healthy soils and the range of potential uses of the land in the future; agricultural purposes being of particular concern.

Failure to internalize environmental costs

A particularly significant concern is that the risks around irreversibility of damage to biodiversity values have not been ‘internalized’ into the economic assessment of the project. That is, the significant risk that the Offset Strategy will not be effective in supporting the biodiversity values that the Project will adversely impact on has not been incorporated into the environmental ‘costs’ of the Project.

The limited scope of environmental impacts that are internalized in the economic assessment can also be demonstrated through the decision to exclude future contributions that Coalpac would make to the OEH for the future management of the offsets. This is stated in the CEA but not justified, “the cost of implementation of these offsets is \$23 Million over the life of the Project, not including any future contributions to OEH for their future management” (Bailey, 2012, p.199). To not include these costs may have a significant impact on the economic net benefit calculation.

The costs of cleared vegetation and lost habitat of threatened species are not included in economic assessment as a cost as it is claimed that these impacts will be counterbalanced by the Offset Strategy. The cost of the Offset Strategy however does not reflect the cost of causing serious damage to vulnerable ecosystems.

‘Maintain or improve biodiversity values’

As outlined in the Director-General requirements (DoPI, 2010), the Offsets Strategy must be comprehensive and *ensure* that the project *maintains* or *improves* the biodiversity values of the region. ‘Ensure’ indicates certainty and ‘maintain or improve’ requires that biodiversity values are kept at least constant. The language used throughout the EIS, when discussing the mitigation and offset measures to compensate for the adverse impacts on biodiversity values, is focused on *reducing* the negative impact, i.e. minimizing damage, not around maintaining or improving biodiversity values. On the other hand s8.15.4 of the CEA states that the Offset Strategy aims to *improve* biodiversity values. Despite the uncertainty identified in the EIS around the potential impact that the Offset Strategy may have, the economic assessment takes the Offset Strategy’s ‘aim’ as being a certainty to be achieved. Further the EIS identifies that the Offset Strategy will restore and conserve land with the *potential* to regenerate. This adds to the case that the certainty expressed in the economic assessment is not appropriate and has led to a significant underestimation of real and significant risks for negative impacts that the Project poses to the environment. There is concern that the Offset Strategy does not enable an informed decision to be made on whether the Strategy will in fact maintain or improve the biodiversity values of the region.

The approach of “avoiding, mitigating and compensating is not consistent with a meaningful TBL (one that upholds ESD principles). The approach of minimizing impact not only indicates damage is still occurring but it is essentially about pursuing one part of ESD (economic) at the expense of the others (environmental and social). A TBL assessment that is consistent with State and Commonwealth law is one that assesses it on the basis that it upholds ESD, i.e. the Project must pursue, or at least achieve, development in all three areas. The language of mitigation and compensation makes very clear the pay-off nature of the Project. With foresight it is clear that the cumulative impacts of projects that take the approach of pay-offs has a high risk of leading to the development of some ESD



domains at the expense of the others. This Project is undoubtedly pursuing short-term economic benefit at the expense of medium to long-term ecological and social development. In the economic assessment it states “the Project is considered to improve the net benefits to society through a substantial increase in net production benefits while minimizing environmental and social costs through Project design and extensive mitigation measures.” (Gillespie Economics, 2011, p3).

Claims in the Economic Assessment that the Offset Strategy would lead to “net benefits” for biodiversity values are not sufficiently justified. Information on how this evaluation outcome has been arrived at lacks sufficient detail to enable the Minister, or appropriate other bodies, to make an informed judgment on this claim. The claim of delivering a net positive benefit to the environment is based on the goals and aims of the Offset Strategy - however these are questionable. The CEA identifies that the Biodiversity Offset Strategy has been designed to provide a net benefit to flora and fauna in the locality and the wider region by:

1. Adding to the vegetation that is already permanently protected, so that there is a substantial increase in conserved woodland and open forest in the long-term;
2. Linking large blocks of forest and woodland to Project rehabilitation areas and to substantial blocks of habitat in the locality, including the Wollemi National Park, Ben Bullen State Forest and Sunny Corner State Forest and riparian forests around the Turon River;
3. Providing for the conservation management of vegetation and threatened species for the life of the Project; and
4. Considering the Ben Bullen State Forest and the objectives of the Garden of Stone Stage 2 (GoS2) proposal. Project offsets were therefore assessed in terms of the benefit that these properties may provide in the long term in relation to promoting connectivity of existing reserves to surrounding habitat and in the development of new conservation areas. Interactions between the Projects offset properties and the rehabilitation of land within the Project Disturbance Boundary, Ben Bullen State Forest and GoS2 proposal area were also considered.

Addressing the first point above, no evidence is provided to suggest that the areas identified as potential Offset Sites would otherwise be cleared. If a similar approach is taken to carbon offsets, the ‘additionality test’ should be applied which would require the proponent to prove that it is reasonably foreseeable that the land, if not purchased and protected, would otherwise be destroyed.

As to the second point it is not clear whether the linkage would not otherwise exist but for this Project. More detail is required around the claim that there is a potential to increase connectivity between areas of remnant vegetation and forested areas within the medium to long-term. What degree of potential? What are the risks if connectivity doesn’t increase, or in fact decrease? What management strategies will be in place should this risk eventuate? Additionally, as explained earlier, there is a lack of certainty regarding the effectiveness of the rehabilitation efforts.

As to the third point, there is significant uncertainty around the capacity of Coalpac to conserve biodiversity values, (as explained previously), for fauna in particular. It is relevant to question here whether Coalpac has taken into account the funding that it would provide OEH for managing the conservation of vegetation and threatened species. If this is the case, it is not appropriate to include this as a benefit but not account for the costs of this management as a cost in the economic assessment.



In response to the fourth point, apart from their being a lack of certainty around securing two major land areas for the Offset Strategy, is the concern that Coalpac have factored in the potential positive impacts of the offset areas being connected to the Project but do not factor in the negative impacts of the project operations on the offset areas, i.e, dust and noise. This is a significant issue that has not been factored into the economic assessment and which poses significant risk that the Offset Strategy will not meet its aims. As acknowledged in the CEA (Cumberland Ecology, 2012, s4.3.1), “specific effects will depend on their [fauna species] mobility and willingness to move through the modified landscape”.

Cumulative impacts

The CEA lacks sufficient detail of the cumulative impacts of the project of removing and destroying habitats of the threatened and endangered species that the project identifies will be significantly affected by its operation. To enable an informed decision to be made on considering this key issue further detail is required on the potential cumulative impacts. The EIA provides some information on the cumulative impacts (see s4.9.1 of the EIA). It states that based on “current information publicly available the surrounding projects are not seeking approval to clear large areas of vegetation”. Further the EIA states that “the cumulative impacts of mining and other industrial development on the GOS2 are not expected to increase dramatically” (Cumberland Ecology, 2012, s4.4). No investigation or estimation as to the likelihood of further clearing and damage to the habitats of threatened and endangered species is made. Whilst the risk of cumulative impacts is acknowledged the sentence following suggests it is not considered a significant risk, “all of the mines in the region propose to rehabilitate mined areas and return them to their original forest and woodland state”. The generic, limited and over-confident information provided is not enough to make an informed decision as to this key issue.

The Offset Strategy and Biodiversity Offset Management Plan

The significance of having a robust Offset Strategy is made very clear in the summary of impacts as detailed in 4.12 of the EIA, “the major impact of the Project will be from the clearance of broad areas of forest and woodland, directly removing biodiverse habitats for many species and important habitat resources...without substantial mitigation and compensation measures, the Project would add significantly to ecological impacts within the locality...substantial ameliorative measures, including avoidance, mitigation and compensation, are an *integral* part of the Project” (Cumberland Ecology, 2012). There is reasonable risk concerning the capacity of Coalpac to deliver on the Offset Strategy, which, as is made clear in the EIA, is integral to this proposed Project. Not only is there a risk that 70% of the land proposed for the Offset Strategy does not become available but there is no Biodiversity Offset Management Plan (BOMP) for the Minister to review.

Two of the four sites proposed for the Offsets Strategy are not currently owned by Coalpac. These are the Hillcroft Offset and the Hyrock Hartly Offset, which comprise 989 ha and 235 ha respectively. This equates to 70% of the total land area proposed for the Offsets Strategy. The CEA acknowledges that Coalpac does not currently own these significant areas, - “Coalpac is in negotiations with the landowner to acquire this property upon grant of the Project Approval” (Bailey, 2012, p.199). Not only does the CEA not identify the risk that the sites may not be available for purchase, but no alternative strategy is proposed in the event that the risk eventuates.

Further, s8.15.4 of the CEA states that the rehabilitation efforts will provide habitat for threatened species, in accordance with the BOMP to be developed. As the BOMP has not yet been developed no assessment of this is possible by the Minister or stakeholders.



A Strategy is not enough to ensure mitigation and compensation of the significant damage that would be caused by the Project. To ensure that appropriate remedial action will be taken, adequate resources must be allocated to managing, monitoring and evaluation of the Strategy, together with resources required in the event that the Strategy fails to deliver on its objectives. The high-level detail of what the BOMP will include does not enable informed decision making. Given the seriousness of the impact on biodiversity, recognized by all parties, greater detail and guarantees of its implication and particular content is important.

5.3 HEALTH AND SAFETY

A significant concern regarding health impacts is that they have not been sufficiently factored in as 'social costs' of the Project for the purposes of determining the net benefit of the Project to the community. The economic assessment identifies dust, noise, GHG and vegetation clearance as the most significant 'social costs'. This section provides a brief review of the impacts of dust and noise.

Noise and Dust

The CEA acknowledges that two private residencies and two other properties are expected to experience a significant noise impact. There is potential that an additional eighteen private residencies and eight other properties will receive moderate noise impacts. The proposed minimization and mitigation strategies have been designed to ensure that impacts do not exceed these predictions. Twenty-two properties are predicted to experience dust impacts that exceed the maximum daily allowable average on more than 25% of their land and nine are predicted to experience the allowable cumulative annual average. These costs have not been transparently valued, as is discussed in Section 6.

The impact of dust and noise on Coalpac employees and on the nearby school have not been discussed or evaluated at all in the economic assessment.

Additional health issues (visual and truck movement)

In addition to the above, visual impacts can be considered a health impact as it interferes with people's enjoyment of their land and thus can be related to levels of stress experienced as a result of the Project. The Air Quality Assessment identifies that the Project will result in high visual impacts for some residencies and likely to impact on others. Visual impacts are significant, they include visibility of mining activities, forest and vegetation clearing activities, and lighting from the construction and operation of the mine. These social impacts have not been factored into the economic assessment.

Claims around truck movement and associated impacts are based on a comparison to what occurs under existing Coalpac approvals. This comparison is not appropriate and is misleading. Truck movement should be compared to the no mine scenario. Similarly, when justifying the Project the statement is made that "the Project would address some issues that have in the past caused concern in the community by substantially removing coal haulage from the road system...this reducing road use, air quality and noise issues" (Bailey, 2012, pxxi). Again this claim for reducing community concerns is made by comparing the proposed Project to the present mine activities as opposed to a no mine scenario. On top of a questionable methodology is the aim and impact of the Project's strategy toward health impacts. The related strategies aim to minimize health impacts as opposed to the ESD requirement to 'maintain or improve' the environment [which includes social/health].



6 Calculations & valuations

As acknowledged in the Economic Assessment, costing environmental impacts is complex, “employment benefits and environmental and social costs are non-market values that can potentially be estimated using non-market valuation methods”. As required by the D-G a “**detailed assessment** of the costs and benefits of the Project as a whole, and whether it would result in a net benefit for NSW” is needed. However, a comprehensive assessment of costs and benefits is not made in the CEA, many costs are not valued, and the environmental and social impacts that are valued are significantly underestimated. The Assessment lacks foresight, does not demonstrate an appreciation or fulfillment of the purpose of ESD and lacks robust and transparent costing methodologies. A number of these are highlighted below:

Unclear boundaries for valuation:

No clear barrier around the project for what Coalpac is taking responsibility and thus factoring into their costing method. The CEA states that Australian environmental impacts must outweigh the benefits of production and employment to make the Project “questionable”. It goes on to identify what the incremental global damage costs would be, valued at \$23/t CO₂-e. With the total estimated at \$15 Million. It goes on to identify that the Australian damage costs from the Projects GHG’s are estimated at \$0.2Million. The methodology for these calculations is not clear. It is important that this difference is explained and that the methodology to arrive at this is transparent.

Opportunity cost of no mine scenario:

The CEA considers the opportunity cost of the coal if the Project did not go ahead as being \$1,519M, 80% of which would go to Coalpac. The loss in potential revenue to NSW would in fact be \$144M and \$169M to the Commonwealth.

The Economic Assessment omitted to identify the opportunity costs/benefits of investments into renewable energy and clean energy jobs that would be created if Australia transitioned off coal and thus avoided GHG from burning of coal. Considering that Coalpac predicts that this project would supply MPPS with 70% of their coal and that MPPS currently accounts for 30% of NSW’s electricity requirements this Project would have a significant impact on delaying NSW’s transition to a clean energy future.

Opportunity costs of clearing public forest

A significant omission by the CEA is the failure to include opportunity costs of the lost portion of forest and impact on the viability of the Garden of Stone Stage Two (GoS2) proposal submitted by the Blue Mountains Conservation Society Inc. and Colong Foundation for Wilderness Ltd’s (Colong Foundation for Wilderness, 2005).

In the CEA, the total forest area is valued at \$0.9M. This figure consists of the sum of the opportunity costs of alternative land use including forestry, recreation, conservation and carbon sequestration. Of particular concern is how the amounts were arrived at.

The method employed to calculate the lost value associated with recreational use is grossly limited and assumes that no services or support infrastructure would be added to the area to encourage and increase enjoyment of the land. That is, it is valued on the basis that the Ben Bullen State Forest having no recreational infrastructure i.e., walking tracks, 4WD tracks, camping areas etc. This is highly unrealistic considering the 21 year time frame of the Project. On applying this method, no estimate for tourism/recreational value is made as the assessment quickly concludes that the recreational value would be minimal and that no information is available on the level of activity that would be



experienced. The figure arrived at for recreational value is \$1M and this is an estimation of duck hunting alone. On top of demonstrating an extremely narrow and unrealistic method of valuing, it does not account for any opportunity costs of not having this potential land use value in the future. This is a significant land use value considering it is a land use that has great potential to fulfill ESD principles (environmental, social and economic).

The conservational values of the State Forest are calculated to at \$0.6M. This figure was arrived at by using the results of a survey that found NSW households would be willing to pay \$3.84 per 10,000 ha of remnant native vegetation conservation in the Riverina Region. Not only were no details of the survey provided to enable an assessment of the reliability and validity of the survey but this was the only method used to measure the total conservation value. This method is inappropriate considering the long-term nature of conservational values and the lack of any mechanisms to place a value on this item for future generations.

The method for calculating sequestration benefit assumes that the benefit will end after the 21 year life of the Project. However, in reality if the Project goes ahead it removes the value of 21 years of sequestered carbon plus many more as it is likely to continue into the future, especially if the GoS2 Proposal succeeds. The likelihood of the success of this Proposal should at least be identified; alongside the other most likely land uses should the Project not occur. The use of the 21 year time frame to calculate lost value does not reflect an application of the intergenerational equity principle; it completely ignores the long-term value that will be lost.

Valuing dust and noise impacts

The Economic Assessment states that “dust and noise impacts are internalized into the costs of the Project by including the acquisition costs of affected properties and the mitigation measures proposed for the properties in the respective management zones” (Gillespie Economics, 2011, p2). It is not transparent what aspects of the mitigation strategies are factored into the economic assessment as social costs. There is a statement that mitigation measures are included in the costs but it is not clear whether the costs of implementing the measures have been included, which may be substantial. On top of this the economic assessment identifies that “environmental impacts of the Project such as noise and dust...would be initially born by the general community” (Gillespie Economics, 2011, p19). What is meant by this?

The method used for valuing dust and noise as social costs ignores significant impacts; it is not robust or thorough. A social cost associated with these impacts, especially dust, that should be included in the valuation are foreseeable and potential medical costs for treating dust and noise related illnesses. Additionally, value should be placed on the impact on the enjoyment and quality of life of surrounding properties and residencies that are predicted to be affected, including the nearby school.

Agricultural land use cost:

“The Australian net production benefits of the Project are substantially greater than those from Ben Bullen State Forest (\$0.9M) or the agricultural land that will be impacted by the Project (\$1.4M). The future land use potential, the opportunity cost of not being able to use it in the future – a critical issue in Australia today and will only grow in significance as agricultural land decreases and demand for food increases. This is a significant long-term impact of the project. Further the on-going sustainability of this land use and the social value of it (significant benefits of being able to produce local produce – including wellbeing and avoiding financial costs of not having to import food, are particularly important social opportunity costs.



7 REFERENCES

- AEMO, 2012. 2011 Electricity statement of opportunities: for the National Electricity Market - Update as at 2 March 2012. Australian Energy Market Operator.
- Bach, T., Brown, J., 2009. Recent Development in Australian Climate Change Litigation: Forward Momentum From Down Under.
- Bailey, J., 2012. Coalpac Consolidation Project - Environmental Assessment: Executive Summary. Hansen Bailey.
- Bates, G., 2002. Environmental Law in Australia (5th ed. LexisNexis. 2002), para [5.19]-[5.20], cited by Farrier D, et. al. (2007) Biodiversity offsets and native vegetation clearance in New South Wales; The rural/urban divide in the pursuit of ecological sustainable deve.
- Climate Commission, 2011. The Critical Decade. Commonwealth of Australia (Department of Climate Change and Energy Efficiency).
- Colong Foundation for Wilderness, 2005. The Gardens of Stone Park Proposal: Stage Two.
- Commonwealth, 2012. An overview of the Clean Energy Legislative Package Key elements of the Clean Energy Future legislation. Commonwealth of Australia, Canberra.
- Cumberland Ecology, 2012. Coalpac Consolidation Project - Environmental Assessment, Appendix J: Ecological Impact Assessment.
- DEFRA, 2005. One future – different paths: The UK’s shared framework for sustainable development. Department for Environment, Food and Rural Affairs, United Kingdom.
- DTI, 2012. Corporate Social Responsibility [WWW Document]. NSW Department of Trade & Investment. URL <http://toolkit.smallbiz.nsw.gov.au/part/17/84/363>
- DoPI, 2010. Coalpac Consolidation Project (10_0178): Director-General’s Requirements.
- DoPI, 2011a. Coalpac Consolidation Project (10_0178) - Supplement to the Director-General’s requirements.
- DoPI, 2011b. NSW Coal & Gas Strategy: Scoping paper. Department of Planning and Infrastructure, NSW Government.
- EIRIS, 2008. The EIRIS Green and Ethical Funds Directory. Ethical Investment Research Service, UK.
- Fraser, D.S., 2005. Inquiry into Regulatory Barriers to Regional Economic Development.
- Gillespie Economics, 2011. Coalpac Consolidation Project - Environmental Assessment, Appendix T: Economic Assessment Final Report. Hansen Bailey.



- Grudnoff, M., 2012. An analysis of the economic impacts of Arrow Energy 's Gladstone LNG Plant. The Australia Insitute.
- Hansen Bailey, 2011. Coalpac Consolidation Project - Environmental Assessment, Appendix E: Revised Environmental Risk Assessment. Hansen Bailey.
- Holding Redlich Lawyers, 2011. Update: Energy & Resources - NSW Coal and Gas Strategy.
- Ison, N., Rutovitz, J., 2012. NSW business energy prices to 2020: calculator.
- Langham, E., Dunstan, C., Walgenwitz, G., Denvir, P., Lederwasch, A., Lander, J., 2010. Building Our Savings: Reduced infrastructure costs from improving building energy efficiency.
- Lenzen, M., Dey, C., Foran, B., Gallego, B., Murray, J., Ward, C., Wood, R., Blackman, E., Cole, J., Sack, F., Wiedmann, T., 2006. Triple-bottom-line accounting of society, economy and environment - a new life-cycle software for business.
- Mason, L., Prior, T., Mudd, G., Giurco, D., 2011. Availability, addiction and alternatives: three criteria for assessing the impact of peakminerals on society. Journal of Cleaner Production 19, 958-966.
- McGrath, C., 2008. Regulating greenhouse gas emissions from Australian coal mines. Environmental Planning Law Journal 25, 240-262.
- Mitchell, M., Curtis, A., Davidson, P., 2007. Can the "triple bottom line" concept help organisations respond to sustainability issues ?, in: Wilson, A.L., Dehaan, R.L., Watts, R.J., Page, K.J., Bowmer, K.H., Curtis, A. (Eds.), Proceedings of the 5th Australian Stream Management Conference. Australian Rivers: Making a Difference. Charles. Sturt University, Thurgoona, New South Wales., Sturt University, Thurgoona, New South Wales., pp. 270-275.
- Myers, N., 2005. Environmental Refugees: An Emergent Security Issue, in: Economic Forum (Session III – Environment and Migration) Prague May 22, 2005.
- NCC, EDO, TEC, 2012. Planning for ecologically sustainable development: Opportunities for improved environmental outcomes and enhanced community involvement in the planning system. Nature Conservation Council of NSW (NCC), Environmental Defender's Office NSW (EDO), Total Environment Centre (TEC).
- Nunn, O., Jander, F., 2012. What is driving the decline in electricity demand? Insider Newsletter (Intelligent Energy Systems) 1-9.
- Owen, A., 2007. Inquiry into Electricity Supply in NSW. NSW Government, September 2007.
- PAEHolmes, 2011. Coalpac Consolidation Project - Environmental Assessment, Appendix G: Air Quality Impact Assessment.
- Potts, T., 2004. Triple Bottom Line Reporting: A Tool for Measuring, Communicating and Facilitating Change in Local Communities, in: Cheney, H., Katz, E., Solomon, F.



- (Eds.), Sustainability and Social Science: Round Table Proceedings- July 2004. The Institute for Sustainable Futures, Sydney and CSIRO Minerals, Melbourne, pp. 1-26.
- Rutovitz, J., Dunstan, C., 2009. Meeting NSW Electricity Needs in a Carbon Constrained World: Lowering Costs and Emissions with Distributed Energy. (Prepared as part of Project 4 of the CSIRO Intelligent Grid Research Program) Institute for Sustainable Futures, University of Technology Sydney.
- Taylor, A.C., Fletcher, T.D., 2006. "Triple-bottom-line" assessment of urban stormwater projects. *Water science and technology : a journal of the International Association on Water Pollution Research* 54, 459-66.
- Transgrid, 2008. New South Wales Annual Planning Report. Transgrid, Sydney.
- Vanclay, F., 2004. Impact Assessment and the Triple Bottom Line: Competing Pathways to Sustainability?, in: Cheney, H., Katz, E., Solomon, F. (Eds.), Sustainability and Social Science: Round Table Proceedings- July 2004. The Institute for Sustainable Futures, Sydney and CSIRO Minerals, Melbourne, pp. 27-39.
- WHO, 2011. Climate Change. URL www.who.int/heli/risks/climate/climatechange/en/

